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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/698,773 | 10/31/2003 | Brian D. Cull | H0003962 | 1816 |

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| EXAMINER |
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HAN, JASON

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| ART UNIT | PAPER NUMBER |
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2875

DATE MAILED: 03/08/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

11A

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|------------------------------|-------------------------------|-----------------------------|--|
| Office Action Summary | Application No. 10/698,773 | Applicant(s) CULL ET AL. | |
| | Examiner Jason M. Han | Art Unit 2875 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 31 October 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☒ Claim(s) 10 and 17 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>10/31/2003</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Specification

1. The abstract of the disclosure is objected to because:
 - a. Grammatical error in line 3 – “though”;
Correction is required. See MPEP § 608.01(b).
2. The disclosure is objected to because of the following informalities:
 - b. Typographical error in paragraph 29, line 4 – “first lamp 202”;
Appropriate correction is required.

Claim Objections

3. Claim 10 is objected to because of the following informalities: Grammatical error in line 2 of the claim – “wherein exit aperture”. Appropriate correction is required.
4. Claim 17 is objected to because of the following informalities: In line 7 of the claim, applicant recites the limitation “first channel”. There is insufficient antecedent basis for this limitation in the claim. Appropriate correction is required, whereby the examiner has assumed the position that the applicant is referring to “the channel”, as described in line 6 of the claim.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

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5. Claims 1-3 and 9 are rejected under 35 U.S.C. 102(b) as being anticipated by Farrell (U.S. Patent 5143433).
6. With regards to Claim 1, Farrell discloses a lamp system including:
 - A first lamp [Figure 9: (16, 18, 20)] with a first pair of cathodes [inherent of fluorescent lamps – Column 1, Line 17; Column 4, Line 47], an exit aperture [Figure 9: (16)], and a first coupling aperture [Figure 9: (23) – top side]; and
 - A second lamp [Figure 9: (23, 37)] with a second pair of cathodes, and a second aperture [Figure 9: (23) – bottom side] proximate the first coupling aperture such that light from the second lamp can pass to the first lamp through the first coupling aperture and the second coupling aperture.
7. With regards to Claim 2, Farrell discloses the first lamp [Figure 8: (18)] and second lamp including tubular fluorescent lamps [Figure 8: (37)].
8. With regards to Claim 3, Farrell discloses the first lamp comprising a reflective coating formed on an inside surface of the first lamp [Figure 9: (20); Column 4, Lines 63-66].
9. With regards to Claim 9, Farrell discloses the exit aperture [Figure 9: (16)] coupled to a display [Figure 9: (12)].
10. Claims 11-12 and 15 are rejected under 35 U.S.C. 102(b) as being anticipated by Farrell (U.S. Patent 5143433).
11. With regards to Claim 11, Farrell discloses a lamp system including:
 - A tubular first lamp [Figure 8: (18)] with a first pair of cathodes [inherent of fluorescent lamps – Column 1, Line 17; Column 4, Line 47], whereby the

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tubular first lamp includes an exit aperture [Figure 9: (16)] coupled to a display [Figures 8-9: (12)], and a first coupling aperture [Figure 9: (23) – top side]; and

- A tubular second lamp [Figure 8: (37)] with a second pair of cathodes, whereby the tubular second lamp includes a second aperture [Figure 9: (23) – bottom side] proximate the first coupling aperture such that light from the second lamp can pass to the first lamp through the first coupling aperture and the second coupling aperture.

12. With regards to Claim 12, Farrell discloses the first lamp comprising a reflective coating formed on an inside surface of the first lamp [Figure 9: (20); Column 4, Lines 63-66].

13. With regards to Claim 15, Farrell discloses the display [Figure 9: (12)] including a liquid crystal display [Column 4, Lines 49-50].

14. Claims 17 and 20 are rejected under 35 U.S.C. 102(b) as being anticipated by Farrell (U.S. Patent 5143433).

15. With regards to Claim 17, Farrell discloses a lamp system including:

- A tubular first lamp [Figure 7: (84)] with a first pair of cathodes [inherent of fluorescent lamps – Column 1, Line 17; Column 6, Line 68], whereby the first tubular lamp includes an exit aperture [Figure 7: opening between (82) and (84)] coupled to a display [Figure 7: (82); Column 7, Lines 5-7], and a first coupling aperture [Figure 7: opening between (84) and (92)]; and

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- A second lamp [Figure 7: (92); Column 7, Lines 1-2; Figure 3 – Column 6, Lines 43-45] proximate the first lamp, whereby the second lamp includes a substrate [Figure 3: (54, 58)] with a channel, a second pair of cathodes [Figure 3: (60); inherent of fluorescent lamps – Column 6, Line 21], and a cover [Figures 3-5: (56); Column 6, Lines 21-52] providing a second coupling aperture [Figure 7: opening between (84) and (92)] such that light from the second lamp can pass to the first lamp through the first coupling aperture and the second coupling aperture.

16. With regards to Claim 20, Farrell discloses the display including a liquid crystal display [Column 7, Line 7].

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

17. Claims 7-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Farrell (U.S. Patent 5143433) as applied to Claim 1 above.

Farrell discloses the claimed invention as cited above, but does not specifically teach in the above embodiments the first (re: Claim 8) and second (re: Claim 7) lamps being a flat lamp. However, it would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate the lamps into a flat shape, since it has been held to be within the general skill of a worker that mere change of form

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or shape of an invention involves only routine skill in the art. *Span-Deck Inc. c. Fab-Con, Inc.* (CA 8, 1982) 215USPQ 835. In this case, a flat lamp may conserve space. In addition, Farrell does teach in another embodiment a flat fluorescent light source [Figure 3: (52)].

18. Claims 4 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Farrell (U.S. Patent 5143433) as applied to Claim 1 above, and further in view of Gleckman (U.S. Patent 5645337).

19. With regards to Claim 4, Farrell discloses the claimed invention as cited above, but does not specifically teach a reflective coating on an inside surface of the second lamp.

Gleckman teaches an aperture fluorescent lamp [Figure 3A: (44)] including a reflective coating on an inside surface of the lamp [Figure 3A: (51)].

It would have been obvious to modify the lamp system of Farrell to incorporate the reflective coating of Gleckman onto the inside surface of the second lamp in order to provide greater efficiency and less loss of light via directing the illumination in a preferred collimated beam.

20. With regards to Claim 10, Farrell in view of Gleckman discloses the claimed invention as cited above. In addition, Gleckman teaches the aperture fluorescent lamp having a phosphor coating [Figure 3A: (52)], and further discloses, "The illumination source is a fluorescent lamp having an interior surface thereof substantially covered with a phosphor, and the light emitting portion is an aperture in the fluorescent lamp wherein no phosphor coating is present [Abstract]." It has also been held that

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rearranging parts of an invention involves only routine skill in the art (*In re Japiske*, 86 USPQ 70), where it is obvious that one could rearrange the phosphor or the reflective coatings to produce a desired optical effect (the basic premise behind an aperture lamp).

21. Claims 5-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Farrell (U.S. Patent 5143433) as applied to Claim 1 above, and further in view of Takahashi (U.S. Patent 6717348).

Farrell discloses the claimed invention as cited above, except for the first lamp being coupled (re: Claim 5) to the second lamp with a reflective bonding agent (re: Claim 6). It would have been obvious to one having ordinary skill in the art at the time the invention was made to have coupled the first and second lamps together, since it has been held that forming in one piece an article which has formerly been formed in two pieces and put together involves only routine skill in the art. *Howard v. Detroit Stove Works*, 150 U.S. 164 (1893). In this case, it is obvious that integrating the first and second lamps into one piece would save space, which is especially beneficial with respect to flat display devices.

Takahashi discloses a display apparatus including a reflective bonding agent [Figure 2: (33)] used for coupling optical elements.

It would have been obvious to modify the lamp system of Farrell to incorporate the reflective bonding agent of Takahashi in order to integrate/couple the first and second lamps into one piece, thereby saving space within the device. In addition, it would have been advantageous to incorporate the reflective bonding agent in order to

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provide greater efficiency and control for the illumination [see Takahashi: Column 4, Lines 40-44].

22. Claims 13 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Farrell (U.S. Patent 5143433) as applied to Claim 11 above, and further in view of Gleckman (U.S. Patent 5645337).

23. With regards to Claim 13, Farrell discloses the claimed invention as cited above, but does not specifically teach a reflective coating on an inside surface of the second lamp.

Gleckman teaches an aperture fluorescent lamp [Figure 3A: (44)] including a reflective coating on an inside surface of the lamp [Figure 3A: (51)].

It would have been obvious to modify the lamp system of Farrell to incorporate the reflective coating of Gleckman onto the inside surface of the second lamp in order to provide greater efficiency and less loss of light via directing the illumination in a preferred collimated beam.

24. With regards to Claim 16, Farrell in view of Gleckman discloses the claimed invention as cited above. In addition, Gleckman teaches the aperture fluorescent lamp having a phosphor coating [Figure 3A: (52)], and further discloses, "The illumination source is a fluorescent lamp having an interior surface thereof substantially covered with a phosphor, and the light emitting portion is an aperture in the fluorescent lamp wherein no phosphor coating is present [Abstract]." It has also been held that rearranging parts of an invention involves only routine skill in the art (*In re Japiske*, 86 USPQ 70), where it is obvious that one could rearrange the phosphor or the reflective

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coatings to produce a desired optical effect (the basic premise behind an aperture lamp).

25. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Farrell (U.S. Patent 5143433) as applied to Claim 11 above, and further in view of Takahashi (U.S. Patent 6717348).

Farrell discloses the claimed invention as cited above, except for the first lamp being coupled to the second lamp with a reflective bonding agent. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have coupled the first and second lamps together, since it has been held that forming in one piece an article which has formerly been formed in two pieces and put together involves only routine skill in the art. *Howard v. Detroit Stove Works*, 150 U.S. 164 (1893). In this case, it is obvious that integrating the first and second lamps into one piece would save space, which is especially beneficial with respect to flat display devices.

Takahashi discloses a display apparatus including a reflective bonding agent [Figure 2: (33)] used for coupling optical elements.

It would have been obvious to modify the lamp system of Farrell to incorporate the reflective bonding agent of Takahashi in order to integrate/couple the first and second lamps into one piece, thereby saving space within the device. In addition, it would have been advantageous to incorporate the reflective bonding agent in order to provide greater efficiency and control for the illumination [see Takahashi: Column 4, Lines 40-44].

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26. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Farrell (U.S. Patent 5143433) as applied to Claim 17 above, and further in view of Gleckman (U.S. Patent 5645337).

Farrell discloses the claimed invention as cited above, but does not specifically teach a reflective coating on an inside surface of the first lamp.

Gleckman teaches an aperture fluorescent lamp [Figure 3A: (44)] including a reflective coating on an inside surface of the lamp [Figure 3A: (51)].

It would have been obvious to modify the lamp system of Farrell to incorporate the reflective coating of Gleckman onto the inside surface of the first lamp in order to provide greater efficiency and less loss of light via directing the illumination in a preferred collimated beam.

27. Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Farrell (U.S. Patent 5143433) as applied to Claim 17 above, and further in view of Takahashi (U.S. Patent 6717348).

Farrell discloses the claimed invention as cited above, except for the first lamp being coupled to the second lamp with a reflective bonding agent. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have coupled the first and second lamps together, since it has been held that forming in one piece an article which has formerly been formed in two pieces and put together involves only routine skill in the art. *Howard v. Detroit Stove Works*, 150 U.S. 164 (1893). In this case, it is obvious that integrating the first and second lamps into one

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piece would save space, which is especially beneficial with respect to flat display devices.

Takahashi discloses a display apparatus including a reflective bonding agent [Figure 2: (33)] used for coupling optical elements.

It would have been obvious to modify the lamp system of Farrell to incorporate the reflective bonding agent of Takahashi in order to integrate/couple the first and second lamps into one piece, thereby saving space within the device. In addition, it would have been advantageous to incorporate the reflective bonding agent in order to provide greater efficiency and control for the illumination [see Takahashi: Column 4, Lines 40-44].

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

The following references are cited to further show the state of the art pertinent to the current application, but are not considered exhaustive:

US Patent 2482421 to Lemmers;

US Patent 5434762 to Shemitz;

US Patent 5889366 to Yokokawa et al;

US Patent 5903091 to MacLennan et al;

US Patent 6186649 to Zou et al;

US Patent 6218776 to Cull et al;

US Patent 6224237 to Wilson;

US Patent 6509675 to MacLennan et al.


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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jason M. Han whose telephone number is (571) 272-2207. The examiner can normally be reached on 8:00am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sandra O'Shea can be reached on (571) 272-2378. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JMH (2/25/2005)



JOHN ANTHONY WARD
PRIMARY EXAMINER